Appendix B

Standards and Guidelines for the No-Action Alternative

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Standards and Guidelines for the No-Action Alternative

The standards and guidelines in this appendix are from the Northwest Forest Plan Record of Decision(USDA,USDI 1994b) for:

- *Survey and Manage*
- *Manage Recreation Areas to Minimize Disturbance to Species*
- *Protect Sites From Grazing*
- *Protection Buffers*
  - *Late-Successional Reserves*
  - *Managed Late-Successional Areas*
  - *Matrix*
- *[Bats] - Provide additional protection for caves, mines, and abandoned wooden bridges and buildings that are used as roost sites for bats.*

These standards and guidelines apply to the No-Action Alternative, which represents the current situation. These five elements are the only portions of the Northwest Forest Plan addressed in this SEIS. The text is excerpted verbatim from the Northwest Forest Plan Record of Decision, except for minor text formatting such as underlines on section titles, spelling corrections of species names as noted, and changes and corrections made to Table C-3 as described in the background section of Chapter 2 of this SEIS. The page numbers in parentheses are the pages where the standards and guidelines appear in the Northwest Forest Plan Record of Decision.

Survey and Manage

(Northwest Forest Plan Record of Decision, p. C-4)

These measures may apply within any land allocations. However, the survey and manage provision for each species will be directed to the range of that species and the particular habitats that it is known to occupy. The "survey and manage" standard and guideline will provide benefits to amphibians, mammals, bryophytes, mollusks, vascular plants, fungi, lichens, and arthropods. Table C-3 at the end of this section of these standards and guidelines shows what species are covered by the survey and manage provision, and which of the following four categories is to be applied to each. The standard and guideline has four components, and priorities differ among them.

1. ***Manage known sites***. Management of known species sites should receive the highest priority of these four categories. Efforts must be undertaken to acquire information on these known sites and to manage this information so that it is available to all project planners. An effective way to accomplish this is to compile the information in a GIS data base. Those efforts should be coordinated by the Regional Ecosystem Office, and should be completed expeditiously. As soon as the information becomes available, it should be used in the design or modification of activities. Activities that are implemented in 1994 should use this information to the greatest degree possible. Activities implemented in 1995 and later must include provisions for these known sites. In most cases, the appropriate action will be protection of relatively small sites, on the order of tens of acres. For some species, including some vascular plants, the appropriate action will include the use of specific management treatments such as prescribed fire. For rare and endemic fungus species, areas of 160 acres should be temporarily withdrawn from ground-disturbing activities around known sites until those sites can be thoroughly surveyed and site-specific measures prescribed. For one fungus species, *Oxyporous nobilissimus*, there are only six known sites and two of these do not currently have a protected status. Management areas of

all useable habitat up to 600 acres are to be established around these two sites for the protection of those populations until the sites can be thoroughly surveyed and site-specific measures prescribed. The actions to protect *Oxyporous* must be undertaken immediately.

2. ***Survey prior to ground-disturbing activities***. Measures to survey for species and manage newly discovered sites are to be phased-in over a somewhat longer timeframe than themeasures specified for currently known sites (see above). For some species, these efforts have been ongoing through rare and sensitive species programs. Where such efforts have been ongoing, they should continue. However, protocols have not been developed for surveys for all of these species, and the expertise needed to conduct them is not readily available in some cases. Efforts to design protocols and implement surveys should be started immediately. Where surveys are completed, the information gathered from them should be used to establish managed sites for species. Within the known or suspected ranges and within the habitat types or vegetation communities associated with the species, surveys for Del Norte, Larch Mountain, Shasta, Siskiyou Mountains, and Van Dyke's salamanders, and red tree voles (and lynx, see p. C-47) must precede the design of all ground-disturbing activities that will be implemented in 1997 or later.

   Development of survey protocols for the other 71 species listed in Table C-3 must begin in 1994 and proceed as soon as possible. These surveys must be completed prior to ground-disturbing activities that will be implemented in FY 1999 or later. Work to establish habitat requirements and survey protocols may be prioritized relative to the estimated threats to the species as reflected in the SEIS. Management standards will be developed to manage habitat for the species on sites where they are located. These surveys may be conducted at a scale most appropriate to the species. For most species, this survey would start at the watershed analysis level with identification of likely species locations based on habitat. Those likely locations would then be thoroughly searched prior to implementation of activities. For other species, the identification of likely sites may be most appropriately done at the scale of individual projects. Surveys should be designed for maximum efficiency, focusing on the likely range and habitats of the target species. Multi-species surveys should be used wherever they would be most efficient. To the degree possible, surveys should be designed to minimize the number of site visits needed to acquire credible information. Survey protocols and proposed site management should be incorporated into interagency conservation strategies developed as part of ongoing planning efforts coordinated by the Regional Ecosystem Office.

3. ***Extensive surveys***. Conduct extensive surveys for the species to find high-priority sites for species management. Specific surveys prior to ground-disturbing activities are not a requirement. Rather, the surveys will be done according to a schedule that is most efficient, and sites will be identified for protection at that time. This strategy entails some risk because some species sites may be disturbed prior to completion of surveys. It is recommended primarily for species whose characteristics make site and time-specific surveys difficult. For example, some fungi only produce fruiting bodies under specific climatic conditions, so finding their location may take several to many years. It would be most efficient to do broad surveys for these species during times of appropriate conditions rather than attempting annual, site-specific surveys. Surveys under this strategy must be underway by 1996. As with surveys described in item 2 above, surveys should be designed for efficiency and standardized protocols should be developed.

4. ***General regional surveys***. The objective is to survey for the species to acquire additional information and to determine necessary levels of protection. Species intended to benefit from this standard and guideline are the arthropods, the fungi species that were not classed as rare and endemic, bryophytes, and lichens. These groups of species are particularly poorly known. Many species have likely not yet been identified, and there is only general information available on the abundance and distribution of known species. The information gathered through these efforts may be useful in refining these standards and guidelines to better provide

for these species as part of the adaptive management process. These surveys are expected to be both extensive and expensive, but the information from them is critical to successful implementation of ecosystem management. They will be initiated no later than FY 1996 and are to be completed within ten years.

Annual status reports are to be submitted to the Regional Ecosystem Office for review beginning at the end of FY 1995. As experience is acquired with these requirements, the Agencies may propose changes to the Regional Ecosystem Office for analysis. These changes could include changing the schedule, moving a species from one survey strategy to another, or dropping this mitigation requirement for any species whose status is determined to be more secure than originally expected. The Regional Ecosystem Office will forward such proposals, along with recommendations, to the Regional Interagency Executive Committee for action as appropriate.

Manage Recreation Areas to Minimize Disturbance to Species

(Northwest Forest Plan Record of Decision, p. C-6)

This standard and guideline applies throughout all land allocations. This standard and guideline will benefit a number of fungi and lichen species whose known locations are predominantly within established recreation sites. This standard and guideline falls within the category of the survey and manage standard and guideline above, and species to be protected through this standard and guideline are among those shown in Table C-3 at the end of this section of these standards and guidelines. Additional information on the habitat requirements of these species are discussed in Appendix J of the Final SEIS.

Protect Sites From Grazing

(Northwest Forest Plan Record of Decision, p. C-6)

This standard and guideline applies throughout all land allocations. This standard and guideline is designed to benefit mollusks and vascular plants. Known and newly discovered sites of these species will be protected from grazing by all practicable steps to ensure that the local populations of the species will not be impacted. Species to be protected through this standard and guideline are:

Mollusks: *Ancotrema voyanum*, *Monadenia fidelis klamathica*, *Monadenia fidelis ochromphalus*, *Pristiloma articum crateris*, *Fluminicola* n. sp. *1*, *Fluminicola* n. sp. *11*, *Fluminicola* n. sp. *19*, *Fluminicola* n. sp. *20*, *Fluminicola* n. sp. *3*, *Fluminicola seminalis*

Vascular Plants: *Pedicularis howellii*

Protection Buffers

(Northwest Forest Plan Record of Decision, p. C-9)

Late-Successional Reserves

Late-Successional Reserves have been designated based on five elements ... [including] Protection Buffers for specific endemic species identified by the Scientific Analysis Team (SAT)(1993). Additional areas, such as 600 acres around known sites of fungus species *Oxyporous nobilissimus*, are protected under the survey and management standards and guidelines starting on page C-4 of these standards and guidelines. Details are as follows.

Protection Buffers
(Northwest Forest Plan Record of Decision, p. C-11)

Unmapped Late-Successional Reserves result from the application of Protection Buffers (see standards and guidelines below).

Standards and Guidelines for Protection Buffers
(Northwest Forest Plan Record of Decision, p. C-19)

Protection Buffers are additional standards and guidelines from the Scientific Analysis Team Report for specific rare and locally endemic species and for other specific species in the upland forest matrix. The following rare and locally endemic species are likely to be assured viability if they occur within reserves. However, there might be occupied locations outside these areas that will be important to protect as well. Protocols for surveys will be developed to ensure a high likelihood of locating these occupied sites; such surveys will be conducted prior to ground-disturbing activities within the known or suspected ranges and within the habitat types or vegetation communities occupied by these species, according to the implementation schedule for Survey and Manage Components 1 and 2 on pages C-4 and C-5 of these standards and guidelines. When located, the occupied sites need to be protected as follows.

Nonvascular Plants

Ptilidium californicum (Liverwort) - This species is rare and has a very limited distribution in old white fir forests with fallen trees. It occurs on trunks of trees at about 5,000-feet elevation. Mitigation options include finding locations and maintaining stands of over-mature white fir at about 5,000-feet elevation for inoculum and dispersal along corridors; and studying specific distribution patterns. Protect known occupied locations if distribution patterns are disjunct and highly localized by deferring timber harvest and avoiding removal of fallen trees and logs.

Ulota meglospora (Moss) - This species occurs in northern California and southwest Oregon. It is best developed (locally abundant) in very old stands of tan oak, Douglas-fir, and other conifer species further north, but is generally scarce throughout its range. The species is poorly known ecologically. Mitigation activities include conducting basic ecological studies and surveying forpresence, particularly in Oregon. Protect known occupied sites if distribution patterns are disjunct and highly localized. Defer timber harvest or other activities that would not maintain desired habitat characteristics and population levels.

Aleuria rhenana (Fungus) - This mushroom is widely distributed but rare and little known throughout its range, known from one collection from Mt. Rainier National Park. It is a conifer litter decomposer. Mitigation activities include conducting ecological studies and surveys to determine localities. Protect known populations if surveys continue to indicate that the population is rare. Defer ground-disturbing activities.

Otidea leporina, O. onotica, and *O. smithii* (Fungi) - These mushrooms occur in conifer duff, and are widespread in distribution but uncommon. They are dependent on older-age forests. Specific mitigation options include protecting older forests from ground disturbance where the species are located.

For the plants listed above, it is recommended that Regional or state office-level ecologists or botanists should: (1) maintain a spatially explicit data base of all known sites in National Forests and BLM Districts, and (2) develop species or area management plans, to be implemented under the guidance of the regional botany programs.

Amphibians

Shasta Salamander - This species is very narrowly distributed, occurring only in localized populations on the Shasta-Trinity National Forest. Only a small part of its range is included within Habitat Conservation Areas identified by the Interagency Scientific Committee (1990) (status within Late-Successional Reserves has not been determined). It occurs in association with limestone outcrops, protected by an overstory canopy. All known and future localities must be

delineated and protected from timber harvest, mining, quarry activity, and road building within the delineated site, and a buffer of at least the height of one site-potential tree or 100 feet horizontal distance, whichever is greater, should surround the outcrop. Additional surveys conducted using a standardized protocol must be undertaken to identify and delineate all occupied sites within the species' potential range.

Birds

Great Gray Owl - Within the range of the northern spotted owl, the great gray owl is most common in lodgepole pine forests adjacent to meadows. However, it is also found in other coniferous forest types. In some locations, such as on the Willamette National Forest west of the crest of the Cascade Range, at least some shelterwood harvesting seems to be beneficial for the species by opening up otherwise closed canopy cover for foraging. In doing so, consequences to species such as northern goshawk and American marten must be evaluated. Specific mitigation measures for the great gray owl, within the range of the northern spotted owl, include the following: Provide a no-harvest buffer of 300 feet around meadows and natural openings and establish 1/4-mile protection zones around known nest sites. Within one year of the signing of the Record of Decision for these standards and guidelines, develop and implement a standardized protocol for surveys; survey for nest locations using the protocol. Protect all future discovered nest sites as previously described.

Managed Late-Successional Areas

(From Northwest Forest Plan Record of Decision, p. C-23, Managed Late-Successional Areas, Description)

Managed Late-Successional Areas have been designated for these standards and guidelines based on two elements ... [including] Protection Buffers for specific endemic species identified by the Scientific Analysis Team (1993). Details are as follows.

Protection Buffers - Unmapped Managed Late-Successional Areas result from the application of Protection Buffers (see standards and guidelines below).

Standards and Guidelines for Protection Buffers

(Northwest Forest Plan Record of Decision, p. C-26)

The following standards and guidelines incorporated from the Scientific Analysis Team Report will result in adding unmapped areas to Managed Late-Successional Areas that should be managed as indicated below. These standards and guidelines are to be applied wherever the species occurs outside of designated areas.

The following rare and locally endemic species are likely to be assured viability if they occur within designated areas. However, there might be occupied locations outside these areas that will be important to protect as well. Protocols for surveys will be developed that will ensure a high likelihood of locating these occupied sites, and such surveys will be conducted prior to ground-disturbing activities within the known or suspected ranges and within the habitat types or vegetation communities occupied by these species, according to the implementation schedule for Survey and Manage Components 1, 2, 3, and/or 4 on pages C-4 through 6 of these standards and guidelines. When located, the occupied sites need to be protected as follows.

Nonvascular Plants

Brotherella roellii (Moss) - This very rare species is endemic to the Washington Cascades north of Snoqualmie Pass. It occupies rotting logs in low-to-mid elevation old-growth stands having dense shade, closed canopies, and high humidity. Mitigation options include locating specific populations and protection of large decay class 3, 4, and 5 logs and canopy closure greater than 70

percent. Defer management activities that conflict with maintaining suitable habitat characteristics and known populations levels. The implementation schedule for this species is the same as for survey and manage components 1 and 3.

Buxbaumia piperi, *B. viridis*, *Rhizomnium nudum*, *Schistostega pennata*, and *Tetraphis geniculata* (Mosses) [Note: *Buxbaumia piperi* was removed from Protection Buffer species status in July 1996 to correct an error in the Northwest Forest Plan's Record of Decision.] - Most of these species are fairly rare (the exception is *B. piperi*). They occur on rotten logs and some organic soil, and are shade dependent, occurring in old-growth forests. *S. pennata* occurs only in mature western red cedar forests in the Olympic National Forest and in the Washington Cascades. Mitigation activities include surveying to determine presence and distribution; and, where located, maintaining decay class 3, 4, and 5 logs and greater than 70 percent closed-canopy forest habitats for shade. Shelterwood and thinning prescriptions for timber harvest will cause their demise, as logs dry out. The implementation schedule for this species is the same as for survey and manage components 1 and 3.

Polyozellus multiplex (Fungus) - Ecologically, this mushroom was considered in the same species group as *Albatrellus caeryliopus* and others, listed earlier in the SAT Report under species aided by marbled murrelet mitigation measures. However, *P. multiplex* occurs in higher elevations of the Cascades in silver fir and mixed conifer (and is thus outside the range of marbled murrelet mitigations). It can be locally abundant and is a mycorrhizal species important to forest health. Like its group associates, it is a good indicator of old-growth forests. Mitigation activities for this species include conducting surveys to define its distribution, and studies to assess its habitat requirements. The implementation schedule for this species is the same as for survey and manage components 1 and 3.

Sarcosoma mexicana (Fungus) - This mushroom occurs in deep conifer litter layers in older forests. It is uncommon to rare and is found in the Oregon and Washington Coast Range into British Columbia. Mitigation activities include surveying for locations and protecting deep litter layers of older forests where found. Defer prescribed burning of understory or other activities which would not retain a deep litter layer. The implementation schedule for this species is the same as for survey and manage component 3.

For the plants listed above, it is recommended that regional and state ecologists or botanists should: (1) maintain a spatially explicit data base of all known sites in National Forests and BLM Districts, and (2) develop species or area management plans, to be implemented under the guidance of the regional botany programs.

Amphibians

Larch Mountain Salamander - Because of the narrow distribution of this species, mostly within the Columbia River Gorge, primary emphasis should be to survey and protect all known sites. Sites must be identified based on fall surveys conducted using a standardized protocol. Known sites are included within boundaries of conservation areas and under these guidelines, are not to be disturbed. Surveys are needed at additional sites in the forest matrix along the Columbia River Gorge. Key habitat is mossy talus protected by overstory canopy. Avoiding any ground-disturbing activity that would disrupt the talus layer where this species occurs is the primary means of protection. Once sites are identified, maintain 40 percent canopy closure of trees within the site and within a buffer of at least the height of one site-potential tree or 100 feet horizontal distance, whichever is greater, surrounding the site. Larger buffer widths are appropriate upslope from protected sites on steep slopes. Partial harvest may be possible if canopy closure can be retained; in such cases logging must be conducted using helicopters or high-lead cable systems to avoid disturbance of the talus layer. The implementation schedule for this species is the same as for survey and manage components 1 and 2.

Siskiyou Mountain Salamander - This species occurs within an extremely narrow range on the Rogue River, Siskiyou, and Klamath National Forests. Its range does not fall within any of the Habitat Conservation Areas identified by the Interagency Scientific Committee in Oregon. Additional surveys conducted using a standardized protocol must be undertaken to delineate range and identify subpopulations. All populations must be protected by delineating an occupied site and avoiding disturbance of talus throughout the site, especially on moist, north-facing slopes, particularly in Oregon where Habitat Conservation Areas do not incorporate species' range. Because this species seems to require cool, moist conditions, a buffer of at least the height of one site-potential tree or 100 feet horizontal distance, whichever is greater, surrounding the site, must be retained around the outer periphery of known sites. Overstory trees must not be removed within the boundary of this buffer. The implementation schedule for this species is the same as for survey and manage components 1 and 2.

Del Norte Salamander - This species occurs in talus slopes protected by overstory canopy that maintains cool, moist conditions on the ground. The species is a slope-valley inhabitant, and sometimes occurs in high numbers near riparian areas. Riparian Reserves, in combination with Late-Successional Reserves and other reserves, will offer some protection to the species but significant numbers also occur in upland areas. Additional mitigation options in this upland matrix include identifying locations (talus areas inhabited by the species) by using a standardized survey protocol, then protecting the location from ground-disturbing activities. Designate a buffer of at least the height of one site-potential tree or 100-feet horizontal distance, whichever is greater, surrounding the location. Within the site and its surrounding buffer, maintain 40 percent canopy closure and avoid any activities that would directly disrupt the surface talus layer. Partial harvest within the buffer may be possible if 40 percent canopy closure can be maintained; in such cases, tree harvest must be conducted using helicopters or high-lead cable systems to avoid compaction or other disturbance of talus. The implementation schedule for this species is the same as for survey and manage components 1 and 2.

Matrix

(Northwest Forest Plan Record of Decision, p. C-45)

Protection Buffers

These standards and guidelines incorporated from the Scientific Analysis Team Report will result in protection for specific species. The following rare and locally endemic species are likely to be assured viability if they occur within designated areas. However, where these species occur in the matrix, the following standards and guidelines will be applied. For the birds listed below, activities that are implemented in 1994 should use this information to the greatest degree possible. Activities implemented in 1995 and later must include these provisions. For the Lynx, implementation should follow the schedule described for survey and manage component 3 (June 11, 1996 change; see page 2-8 in Chapter 2 of this SEIS.)

Birds

White-headed Woodpecker, Black-backed Woodpecker, Pygmy Nuthatch, and Flammulated Owl: These species will not be sufficiently aided by application of mitigation measures for riparian habitat protection or for marbled murrelets alone. They all occur on the periphery of the range of the northern spotted owl on the east slope of the Cascade Range in Washington or Oregon. Additionally, the white-headed woodpecker and flammulated owl occur in the Klamath Province in northwestern California and southwestern Oregon. The viability of all four species within the range of the northern spotted owl was rated as a medium risk on National Forests, although they each are much more widely distributed elsewhere.

Apply the following mitigation standards and guidelines to ensure that the distribution and numbers of all four species do not severely decline on National Forests and BLM Districts within the range of the northern spotted owl. These guidelines apply to the forest matrix outside

designated habitat for the northern spotted owl and Riparian Reserves. Maintain adequate numbers of large snags and green-tree replacements for future snags within the four species' ranges in appropriate forest types. Where feasible, green-tree replacements for future snags can be left in groups to reduce blowdown. Specifically, the Scientific Analysis Team recommends that no snags over 20 inches dbh be marked for cutting. The Scientific Analysis Team recognizes, however, that safety considerations may prevent always retaining all snags. Use of standardized definitions of hazard trees is required. For the longer term, provide for sufficient numbers of green trees to provide for the full (100 percent) population potential of each species.

As depicted by Neitro in *Management of Wildlife and Fish Habitats in Forests of Western Oregon and Washington* (1985), the 100 percent population potential for white-headed woodpeckers is 0.60 conifer snags (ponderosa pine or Douglas-fir) per acre in forest habitats; these snags must be at least 15 inches dbh (or largest available if 15 inch dbh snags are not available) and in soft decay stages, and must be provided in stands of ponderosa pine and mixed pine/Douglas-fir. The 100 percent population potential for black-backed woodpeckers is 0.12 conifer snags per acre in forest habitats; these snags must be at least 17 inches dbh (or largest available if 17-inch dbh snags are not available) and in hard decay stages, and must be provided in stands of mixed conifer and lodgepole pine in higher elevations of the Cascade Range. Provision of snags for other cavity-nesting species, including primary cavity-nesters, must be added to the requirements for these two woodpecker species. Site-specific analysis, and application of a snag recruitment model (specifically, the Forest Service's Snag Recruitment Simulator) taking into account tree species, diameters, falling rates, and decay rates, will be required to determine appropriate tree and snag species mixes and densities. If snag requirements cannot be met, then harvest must not take place.

As identified by the expert panel, black-backed woodpeckers also require beetle-infested trees for foraging; some such trees should be provided in appropriate habitat, and sanitation harvest of all such trees would be detrimental to the species. More information is needed on habitat use, seasonal occurrence, and use of forest age classes and burns, for the black-backed woodpecker.

Pygmy nuthatches use habitat very similar to those of white-headed woodpeckers. Pygmy nuthatches require large trees, typically ponderosa pine within the range of the northern spotted owl, for roosting. Provision of snags for white-headed woodpeckers is assumed to provide for the needs of pygmy nuthatch, as no species-specific guidelines for the species have been developed. Additional information on ecology of pygmy nuthatch within the range of the northern spotted owl is needed to develop more precise standards and guidelines.

Flammulated owls are secondary cavity-nesters and use cavities in snags and live trees that are created by woodpeckers or, less often, that occur naturally. It is assumed that standards and guidelines for snags and green-tree replacements for woodpeckers and other primary cavity-nesting species, as provided by existing National Forest and BLM District Land and Resource Management Plans and for the woodpeckers in this species group, would provide for flammulated owls.

Note: The snag recommendations above are based on the model presented by Neitro and others (1985). In that model, snag requirements for individual species were treated as additive in developing snag requirements for the overall community of cavity excavators. As noted above, "provision of snags for other cavity-nesting species, including primary cavity nesters, must be added to the requirements for these two woodpecker species" (black-backed and white headed woodpeckers).

Snag requirements are developed by the National Forests and BLM Districts for specific forest cover types, and these may be further broken down by geographic location. The intent is to tailor the requirements to those species that are actually expected to occur in an area. To determine if the protection buffer requirements should be added to existing Forest or BLM District Plan requirements, the basis for those existing requirements should be analyzed to determine if they

include the species identified by SAT at the specified level of percent population potential. If they do not, then the SAT requirements must be added to the existing Forest and BLM District Plan requirements.

Mammals

Lynx - Lynx are rare within the range of the northern spotted owl, occurring primarily in the Okanogan area of Washington. The lynx is currently listed by the Fish and Wildlife Service as a Category 2 candidate (a species for which additional information is needed to propose listing as threatened or endangered). A petition was filed to list the lynx as endangered within the northern Cascades of Washington, based on small population size, population isolation, and lack of adequate prey base (snowshoe hare). However, the Fish and Wildlife Service ruled that available information does not warrant listing the lynx in Washington.

Three primary habitat components for lynx are (1) foraging habitat (15 to 35 year old lodgepole pine) to support snowshoe hare and provide hunting cover, (2) denning sites (patches of greater than 200-year old spruce and fir, generally less than 5 acres), and (3) dispersal/travel cover (variable in vegetation composition and structure). The major limiting factor is abundance of snowshoe hare, which in turn is limited by availability of winter habitat (primarily early-successional lodgepole pinewith trees at least 6 feet tall). Past excessive trapping of lynx and incidental mortality of lynx from hunting of other species have depressed populations and may have been detrimental to local lynx populations in Washington. Roads provide access to hunters and trappers and thus road density may be related to lynx mortality.

The reserves and other designated areas in these standards and guidelines will provide denning habitat within protected forest stands in juxtaposition with early-successional vegetation in the forest matrix. Connectivity between many of the denning patches will be provided by the network of buffers along streams under the Riparian Reserves.

In addition, the Scientific Analysis Team proposed development of site-specific timber harvest, roading, and fire management plans in known lynx range. These plans should be developed in consultation with state wildlife agencies and should address: (1) minimizing road construction, closing unused roads, and maintaining roads to the minimum standard possible; (2) using prescribed fire to maintain forage for snowshoe hare in juxtaposition with hunting cover; (3) designating areas as closed to kill trapping of any furbearer to avoid incidental lynx mortality to maintain population refugia for lynx in key areas; (4) planning for kill trapping closure on a wider basis if data indicate a declining lynx population as a result of incidental trapping mortality; and (5) developing and implementing a credible survey and monitoring strategy to determine the distribution of lynx throughout its potential range.

Provide Additional Protection for Caves, Mines, and Abandoned Wooden Bridges and Buildings That are Used as Roost Sites for Bats

(This standard and guideline appears in both the Matrix and Adaptive Management Area land allocation sections (pp. C-43 and D-10 , respectively) of the Northwest Forest Plan Record of Decision.)

Most bat species occurring in the Pacific Northwest roost and hibernate in crevices in protected sites. Suitable roost sites and hibernacula, however, fall within a narrow range of temperature and moisture conditions. Sites commonly used by bats include caves, mines, snags and decadent trees, wooden bridges, and old buildings. Additional provisions for the retention of large snags and decadent trees are included in the standard and guideline for green tree patches in the matrix. Caves, mines, and abandoned wooden bridges and buildings, however, are extremely important roost and hibernation sites, and require additional protection to ensure that their value as habitat is maintained.

This provision is intended to apply in matrix forests and Adaptive Management Areas, and elements such as protection of known occupied caves should be considered for other land allocations. Conduct surveys of crevices in caves, mines, and abandoned wooden bridges and buildings for the presence of roosting bats, including fringed myotis, silver-haired bats, long-eared myotis, long-legged myotis, and pallid bats. For the purposes of this standard and guideline, caves are defined as in the Federal Cave Resources Protection Act of 1988 as "any naturally occurring void, cavity, recess, or system of interconnected passages which occur beneath the surface of the earth or within a cliff or ledge (... but not including any ... man-made excavation) and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or man-made." Searches should be conducted during the day in the summer (to locate day roosts and maternity colonies), at night during the late summer and fall (to locate night roosts, which are important for reproduction), and during the day in the winter (to locate hibernacula). If bats are found, identify the species using the site and determine for what purpose it is being used by bats. As an interim measure, timber harvest is prohibited within 250 feet of sites containing bats. Management standards and guidelines that may be included as mitigation measures in project or activity plans will be developed for the site. These standards will be developed following an inventory andmapping of resources. The purpose of the standards and guidelines will be protection of the site from destruction, vandalism, disturbance from road construction or blasting, or any other activity that could change cave or mine temperatures or drainage patterns. The size of the buffer, and types of activities allowed within the buffer, may be modified through the standards developed for the specific site. Retention of abandoned bridges or buildings must be made contingent on safety concerns.

Townsend's big-eared bats are of concern to state wildlife agencies in both Washington and Oregon. These bats are strongly associated with caves, and are extremely sensitive to disturbance, especially from recreational cavers. When Townsend's big-eared bats are found occupying caves or mines on federal land, the appropriate agency should be notified, and management prescriptions for that site should include special consideration for potential impacts on this species.

Table C-3 on the following pages is from the Northwest Forest Plan Record of Decision, pages C-49 through C-61.

Table C-3. Species to be Protected Through Survey and Manage Standards and Guidelines. Each of the four survey strategies is described in the text [of this Appendix, pp. 9 through 11].

Species	Survey Strategies 1	2	3	4
FUNGI				
Mycorrhizal Fungi				
Boletes				
Gastroboletus subalpinus	x		x	
Gastroboletus turbinatus			x	
Boletes, low elevation				
Boletus piperatus			x	
Tylopilus pseudoscaber	x		x	
Rare Boletes				
Boletus haematinus	x		x	
Boletus pulcherrimus	x		x	
Gastroboletus imbellus	x		x	
Gastroboletus ruber	x		x	
False Truffles				
Nivatogastrium nubigenum	x		x	
Rhizopogon abietis			x	
Rhizopogon atroviolaceus			x	
Rhizopogon truncatus			x	
Thaxterogaster pingue			x	
Uncommon False Truffle				
Macowanites chlorinosmus	x		x	
Rare False Truffles				
Alpova alexsmithii	x		x	
Alpova olivaceotinctus	x		x	
Arcangeliella crassa	x		x	
Arcangeliella lactarioides	x		x	
Destuntzia fusca	x		x	
Destuntzia rubra	x		x	
Gautieria magnicellaris	x		x	
Gautieria otthii	x		x	
Leucogaster citrinus	x		x	
Leucogaster microsporus	x		x	
Macowanites lymanensis	x		x	
Macowanites mollis	x		x	
Martellia fragrans	x		x	
Martellia idahoensis	x		x	
Martellia monticola	x		x	

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies 1	2	3	4
Rare False Truffles (continued)				
Octavianina macrospora	x		x	
Octavianina papyracea	x		x	
Rhizopogon brunneiniger	x		x	
Rhizopogon evadens var. *subalpinus*	x		x	
Rhizopogon exiguus	x		x	
Rhizopogon flavofibrillosus	x		x	
Rhizopogon inquinatus	x		x	
Sedecula pulvinata	x		x	
Undescribed Taxa, Rare Truffles & False Truffles				
Alpova sp. nov. #Trappe 9730	x		x	
Alpova sp. nov. #Trappe 1966	x		x	
Arcangeliella sp. nov. #Trappe 12382	x		x	
Arcangeliella sp. nov. #Trappe 12359	x		x	
Chamonixia pacifica sp. nov. #Trappe 12768	x		x	
Elasomyces sp. nov. #Trappe 1038	x		x	
Gastroboletus sp. nov. #Trappe 2897	x		x	
Gastroboletus sp. nov. #Trappe 7515	x		x	
Gastrosuillus sp. nov. #Trappe 7516	x		x	
Gastrosuillus sp. nov. #Trappe 9608	x		x	
Gymnomyces sp. nov. #Trappe 4703, 5576	x		x	
Gymnomyces sp. nov. #Trappe 5052	x		x	
Gymnomyces sp. nov. #Trappe 1690,1706,1710	x		x	
Gymnomyces sp. nov. #Trappe 7545	x		x	
Hydnotrya sp. nov. #Trappe 787, 792	x		x	
Hydnotrya subnix sp. nov. #Trappe 1861	x		x	
Martellia sp. nov. #Trappe 649	x		x	
Martellia sp. nov. #Trappe 1700	x		x	
Martellia sp. nov. #Trappe 311	x		x	
Martellia sp. nov. #Trappe 5903	x		x	
Octavianina sp. nov. #Trappe 7502	x		x	
Rhizopogon sp. nov. #Trappe 9432	x		x	
Rhizopogon sp. nov. #Trappe 1692	x		x	
Rhizopogon sp. nov. #Trappe 1698	x		x	
Thaxterogaster sp. nov. #Trappe 4867,6242,7427,7962,8520	x		x	
Tuber sp. nov. #Trappe 2302	x		x	
Tuber sp. nov. #Trappe 12493	x		x	
Rare Truffles				
Balsamia nigra	x		x	
Choiromyces alveolatus	x		x	

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies 1	2	3	4
Rare Truffles (continued)				
Choiromyces venosus	x		x	
Elaphomyces anthracinus	x		x	
Elaphomyces subviscidus	x		x	
Chanterelles				
Cantharellus cibarius			x	x
Cantharellus subalbidus			x	x
Cantharellus tubaeformis			x	x
Chanterelles - Gomphus				
Gomphus bonarii			x	
Gomphus clavatus			x	
Gomphus floccosus			x	
Gomphus kauffmanii			x	
Rare Chanterelle				
Cantharellus formosus	x		x	
Polyozellus multiplex	x		x	
Uncommon Coral Fungi				
Ramaria abietina			x	
Ramaria araiospora	x		x	
Ramaria botryis var. *aurantiiramosa*	x		x	
Ramaria concolor f. tsugina			x	
Ramaria coulterae			x	
Ramaria fasciculata var. *sparsiramosa*	x		x	
Ramaria gelatiniaurantia	x		x	
Ramaria largentii	x		x	
Ramaria rubella var. *blanda*	x		x	
Ramaria rubrievanescens	x		x	
Ramaria rubripermanens	x		x	
Ramaria suecica			x	
Ramaria thiersii	x		x	
Rare Coral Fungi				
Ramaria amyloidea	x		x	
Ramaria aurantiisiccescens	x		x	
Ramaria celerivirescens	x		x	
Ramaria claviramulata	x		x	
Ramaria concolor f. marri	x		x	
Ramaria cyaneigranosa	x		x	

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies 1	2	3	4
Rare Coral Fungi (continued)				
Ramaria hilaris var. *olympiana*	x		x	
Ramaria lorithamnus	x		x	
Ramaria maculatipes	x		x	
Ramaria rainierensis	x		x	
Ramaria rubribrunnescens	x		x	
Ramaria stuntzii	x		x	
Ramaria verlotensis	x		x	
Ramaria gracilis	x		x	
Ramaria spinulosa	x		x	
Phaeocollybia				
Phaeocollybia attenuata			x	
Phaeocollybia californica	x		x	
Phaeocollybia carmanahensis	x		x	
Phaeocollybia dissiliens	x		x	
Phaeocollybia fallax			x	
Phaeocollybia gregaria	x		x	
Phaeocollybia kauffmanii	x		x	
Phaeocollybia olivacea			x	
Phaeocollybia oregonensis	x		x	
Phaeocollybia piceae	x		x	
Phaeocollybia pseudofestiva			x	
Phaeocollybia scatesiae	x		x	
Phaeocollybia sipei	x		x	
Phaeocollybia spadicea			x	
Uncommon Gilled Mushrooms				
Catathelasma ventricosa			x	
Cortinarius azureus			x	
Cortinarius boulderensis	x		x	
Cortinarius cyanites			x	
Cortinarius magnivelatus	x		x	
Cortinarius olympianus	x		x	
Cortinarius spilomius			x	
Cortinarius tabularis			x	
Cortinarius valgus			x	
Dermocybe humboldtensis	x		x	
Hebeloma olympiana	x		x	
Hygrophorus caeruleus	x		x	
Hygrophorus karstenii			x	
Hygrophorus vernalis	x		x	

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies 1	2	3	4
Rare-Gilled Mushrooms				
Russula mustelina			x	
Chroogomphus loculatus	x		x	
Cortinarius canabarba	x		x	
Cortinarius rainierensis	x		x	
Cortinarius variipes	x		x	
Cortinarius verrucisporus	x		x	
Cortinarius wiebeae	x		x	
Tricholoma venenatum	x		x	
Uncommon Ecto-Polypores				
Albatrellus ellisii			x	
Albatrellus flettii			x	
Rare Ecto-Polypores				
Albatrellus avellaneus	x		x	
Albatrellus caeruleoporus	x		x	
Tooth Fungi				
Hydnum repandum			x	
Hydnum umbilicatum			x	
Phellodon atratum			x	
Sarcodon fuscoindicum			x	
Sarcodon imbricatus			x	
Rare Zygomycetes				
Endogone acrogena	x		x	
Endogone oregonensis	x		x	
Glomus radiatum	x		x	
Saprobes (Decomposers)				
Uncommon Gilled Mushrooms				
Baeospora myriadophylla			x	
Chrysomphalina grossula			x	
Collybia bakerensis	x		x	
Fayodia gracilipes (rainierensis)			x	
Gymnopilus puntifolius	x		x	
Marasmius applanatipes	x		x	
Mycena hudsoniana	x		x	
Mycena lilacifolia			x	
Mycena marginella			x	
Mycena monticola	x		x	

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies 1	2	3	4
Uncommon Gilled Mushrooms (continued)				
Mycena overholtsii	x		x	
Mycena quinaultensis	x		x	
Mycena tenax			x	
Mythicomyces corneipes			x	
Neolentinus kauffmanii	x		x	
Pholiota albivelata	x		x	
Stagnicola perplexa			x	
Rare Gilled Mushrooms				
Clitocybe subditopoda	x		x	
Clitocybe senilis	x		x	
Neolentinus adherens	x		x	
Rhodocybe nitida	x		x	
Rhodocybe speciosa	x		x	
Tricholomopsis fulvescens	x		x	
Noble Polypore (rare and endangered)				
Oxyporus nobilissimus	x	x	x	
Bondarzewia Polypore				
Bondarzewia montana	x	x	x	
Rare Resupinates and Polypores				
Aleurodiscus farlowii	x		x	
Dichostereum granulosum	x		x	
Uncommon Cup Fungi [Additional header added; not in original ROD]				
Cudonia monticola			x	
Gyromitra californica			x	x
Gyromitra esculenta			x	x
Gyromitra infula			x	x
Gyromitra melaleucoides			x	x
Gyromitra montana (syn. *G. gigas*)			x	x
Otidea leporina	x		x	
Otidea onotica	x		x	
Otidea smithii	x		x	
Plectania melastoma			x	
Podostroma alutaceum			x	
Sarcosoma mexicana			x	
Sarcosphaera eximia			x	
Spathularia flavida			x	

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Table C-3. (Continued)

Species	Survey Strategies 1	2	3	4
Rare Cup Fungi				
Aleuria rhenana [“x’s” not in original ROD]	x		x	
Bryoglossum gracile [“x’s” not in original ROD]	x		x	
Gelatinodiscus flavidus [“x’s” not in original ROD]	x		x	
Helvella compressa	x		x	
Helvella crassitunicata	x		x	
Helvella elastica	x		x	
Helvella maculata	x		x	
Neournula pouchetii	x		x	
Pithya vulgaris	x		x	
Plectania latahensis	x		x	
Plectania milleri	x		x	
Pseudaleuria quinaultiana	x		x	
Club Coral Fungi				
Clavariadelphus ligula			x	x
Clavariadelphus pistilaris			x	x
Clavariadelphus truncatus			x	x
Clavariadelphus borealis			x	x
Clavariadelphus lovejoyae			x	x
Clavariadelphus sachalinensis			x	x
Clavariadelphus subfastigiatus			x	x
Jelly Mushroom				
Phlogoitis helvelloides			x	x
Branched Coral Fungi				
Clavulina cinerea			x	x
Clavulina cristata			x	x
Clavulina ornatipes			x	x
Mushroom Lichen				
Phytoconis ericetorum			x	x
Parasitic Fungi				
Asterophora lycoperdoides			x	
Asterophora parasitica			x	
Collybia racemosa			x	
Cordyceps capitata			x	
Cordyceps ophioglossoides			x	
Hypomyces luteovirens			x	

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies 1	2	3	4
Cauliflower Mushroom				
Sparassis crispa			x	
Moss Dwelling Mushrooms				
Cyphellostereum laeve			x	
Galerina atkinsoniana			x	
Galerina cerina			x	
Galerina heterocystis			x	
Galerina sphagnicola			x	
Galerina vittaeformis			x	
Rickenella setipes			x	
Coral Fungi				
Clavicorona avellanea			x	
LICHENS				
Rare Forage Lichen				
Bryoria tortuosa	x		x	
Rare Leafy (arboreal) Lichens				
Hypogymnia duplicata	x	x	x	
Tholurna dissimilis	x		x	
Rare Nitrogen-fixing Lichens				
Dendriscocaulon intricatulum	x		x	
Lobaria hallii	x		x	
Lobaria linita	x	x	x	
Nephroma occultum	x		x	
Pannaria rubiginosa	x		x	
Pseudocyphellaria rainierensis	x	x	x	
Nitrogen-fixing Lichens				
Lobaria oregana				x
Lobaria pulmonaria				x
Lobaria scrobiculata				x
Nephroma bellum				x
Nephroma helveticum				x
Nephroma laevigatum				x
Nephroma parile				x
Nephroma resupinatum				x
Pannaria leucostictoides				x
Pannaria mediterranea				x

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Table C-3. (Continued))

Species	Survey Strategies 1	2	3	4
Nitrogen-fixing Lichens (continued)				
Pannaria saubinetii				x
Peltigera collina				x
Peltigera neckeri				x
Peltigera pacifica				x
Pseudocyphellaria anomala				x
Pseudocyphellaria anthraspis				x
Pseudocyphellaria crocata				x
Sticta beauvoisii				x
Sticta fuliginosa				x
Sticta limbata				x
Pin Lichens				
Calicium abietinum				x
Calicium adaequatum				x
Calicium adspersum				x
Calicium glaucellum				x
Calicium viride				x
Chaenotheca brunneola				x
Chaenotheca chrysocephala				x
Chaenotheca ferruginea				x
Chaenotheca furfuracea				x
Chaenotheca subroscida				x
Chaenothecopis pusilla				x
Cyphelium inquinans				x
Microcalicium arenarium				x
Mycocalicium subtile				x
Stenocybe clavata				x
Stenocybe major				x
Rare Rock Lichens				
Pilophorus nigricaulis	x		x	
Sticta arctica	x		x	
Riparian Lichens				
Cetrelia cetrarioides				x
Collema nigrescens				x
Leptogium burnetiae var. *hirsutum*				x
Leptogium cyanescens				x
Leptogium saturninum				x
Leptogium teretiusculum				x
Platismatia lacunosa				x

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Table C-3. (Continued)

Species	Survey Strategies 1	2	3	4
Riparian Lichens (continued)				
Ramalina thrausta				x
Usnea longissima				x
Aquatic Lichens				
Dermatocarpon luridum	x		x	
Hydrothyria venosa	x		x	
Leptogium rivale	x		x	
Rare Oceanic Influenced Lichens				
Bryoria pseudocapillaris	x		x	
Bryoria spiralifera	x		x	
Bryoria subcana	x		x	
Buellia oidalea	x		x	
Erioderma sorediatum	x		x	
Hypogymnia oceanica	x		x	
Leioderma sorediatum	x		x	
Leptogium brebissonii	x		x	
Niebla cephalota	x		x	
Pseudocyphellaria mougeotiana	x		x	
Teloschistes flavicans	x		x	
Usnea hesperina	x		x	
Oceanic Influenced Lichens				
Cetraria californica	x		x	
Heterodermia leucomelos	x		x	
Loxospora sp. nov. "*corallifera*" (*Brodo* in edit)	x		x	
Pyrrhospora quernea	x		x	
Additional Lichen Species				
Cladonia norvegica			x	
Heterodermia sitchensis			x	
Hygomnia vittiata			x	
Hypotrachyna revoluta			x	
Ramalina pollinaria			x	
Nephroma isidiosum			x	
Bryophytes				
Antitrichia curtipenula				x
Bartramiopsis lescurii	x		x	
Brotherella roelli	x		x	

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies 1	2	3	4
Bryophytes (continued)				
Diplophyllum albicans				
[“*Diplophyllu albicans*” in original ROD; corrected typographical error]]	x		x	
Diplophyllum plicatum	x	x		
Douinia ovata				x
Encalypta brevicolla var. *crumiana*	x		x	
Herbertus aduncus	x		x	
Herbertus sakurali	x		x	
Iwatsuklella leucotricha	x		x	
Kurzia makinoana	x	x		
Marsupella emarginata var. *aquatica*	x	x		
Orthodontium gracile				
[Corrected spelling; was “*Orthodontlum gracile*” in original ROD]	x		x	
Plagiochila satoi				
[Corrected spelling; was “*Plagiochila satol*” in original ROD]	x		x	
Plagiochila semidecurrens	x		x	
Pleuroziopsis ruthenica	x		x	
Ptilidium californicum	x	x		
Racomitrium aquaticum	x		x	
Radula brunnea	x		x	
Scouleria marginata				x
Tetraphis geniculata	x		x	
Tritomaria exsectiformis	x	x		
Tritomaria quinquedentata	x		x	
Amphibians				
Del Norte salamander		x		
Larch Mountain salamander		x		
Shasta salamander	x	x		
Siskiyou Mountains salamander	x	x		
Van Dyke’s salamander (Cascades)		x		
Mammals				
Red tree vole (*P. longicaudus*)		x		
Mollusks				
Cryptomastix devia	x	x		
Cryptomastix hendersoni	x	x		
Helminthoglypta hertleini	x	x		
Helminthoglypta talmadgei	x	x		
Megomphix hemphilli	x	x		
Monadenia chaceana	x	x		

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (Continued)

Species	Survey Strategies 1	2	3	4
Mollusks (continued)				
Monadenia churchi	x	x		
Monadenia fidelis minor	x	x		
Monadenia troglodytes troglodytes	x	x		
Monadenia troglodytes wintu	x	x		
Oreohelix n. sp.	x	x		
Pristiloma articum crateris	x	x		
Trilobopsis roperi	x	x		
Trilobopsis tehamana	x	x		
Vertigo n. sp.	x	x		
Vespericola pressleyi	x	x		
Vespericola shasta	x	x		
Deroceras hesperium	x	x		
Hemphillia burringtoni [Corrected spelling; was "*Hemphillia barringtoni*" in original ROD]	x	x		
Hemphillia glandulosa	x	x		
Hemphillia malonei	x	x		
Hemphillia pantherina	x	x		
Prophysaon coeruleum	x	x		
Prophysaon dubium	x	x		
Fluminicola n. sp. 1	x	x		
Fluminicola n. sp. 11	x	x		
Fluminicola n. sp. 14	x	x		
Fluminicola n. sp. 15	x	x		
Fluminicola n. sp. 16	x	x		
Fluminicola n. sp. 17	x	x		
Fluminicola n. sp. 18	x	x		
Fluminicola n. sp. 19	x	x		
Fluminicola n. sp. 2	x	x		
Fluminicola n. sp. 20	x	x		
Fluminicola n. sp.	x	x		
Fluminicola seminalis	x	x		
Juga (O.) n. sp. 2	x	x		
Juga (O.) n. sp. 3	x	x		
Lyogyrus n. sp. 1	x	x		
Lyogyrus n. sp. 2	x	x		
Lyogyrus n. sp. 3	x	x		
Vorticifex klamathensis sinitsini	x	x		
Vorticifex n. sp. 1	x	x		

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.

Table C-3. (continued)

Species	Survey Strategies 1	2	3	4
Vascular Plants				
Allotropa virgata	x	x		
Arceuthobium tsugense subsp. *mertensianae* [change from original ROD;IB#OR-95-443]				x
Aster vialis	x	x		
Bensoniella oregana (California)	x	x		
Botrychium minganense	x	x		
Botrychium montanum	x	x		
Clintonia andrewsiana	x	x		
Coptis asplenifolia	x	x		
Coptis trifolia	x	x		
Corydalis aquae-gelidae	x	x		
Cypripedium fasciculatum (Klamath)	x	x		
Cypripedium montanum (west Cascades)	x	x		
Galium kamtschaticum	x	x		
Habenaria orbiculata	x	x		
Pedicularis howellii [This species was in original ROD twice.]	x	x		
Scoliopus biglovei	x	x		
Arthropods				
Canopy herbivores (south range)				x
Coarse wood chewers (south range)				x
Litter and soil dwelling species (south range)				x
Understory and forest gap herbivores (south range) [limit to south range; IB#OR-97-045]				x

Survey Strategies: 1 = Manage known sites; 2 = Survey prior to activities and manage sites; 3 = Conduct extensive surveys and manage sites; and 4 = Conduct general regional surveys.